

8/1/1844

The Great Industry of the West-riding.

The stranger who enters a Yorkshire 'clothing town' will easily discover the sort of work that most of the inhabitants are engaged upon. He sees many waggons in the streets heaped high with great sacks which he is told are full of wool. On all sides of him are very tall chimneys sending out black clouding smoke, & every chimney belongs to a large building with a flat front & many windows; most likely the building has three sides with a court or yard in the middle. Let him watch before he gets gone of these buildings at mid-day, he will see great crowds of people pouring out, hundreds, in some cases, thousands, of men & women, boys & girls. These are not like the smartly dressed people who pour out of church & chapel on a Sunday. The men boys wear long blue frock coats; the women big white aprons that ~~cover~~ entirely cover their dresses. Never a bonnet - is to be seen in the crowd; the women have hats & bonnets at home for Sundays as ornaments as anybody's; but, to-day, they all wear big shawls pinned under the chin hanging below the waists. There are a great many more women than men in the noisy throng which are streaming off into all the little streets near the mill. Some of the drovers every cottage have a last dinner, & then back again to work at the mill. For these are the 'mill hands' whose business it is to look after the great machines used in the combing, carding, drawing, roving, spinning, & weaving of wool. Every body knows that wool grows in the sheep's back & that our flannels & warm stuff gowns & coats are made of it; Yorkshire children & women

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I know that prepared virgin wool & clean it into various stuffs is the great business of their country.

But how does it happen that wool is used for this purpose? It might easily occur to any one to take the fleece as it comes off the sheep's back, to keep him warm, but to spin the short fibres of the wool into long threads, & to weave them into stuffs, is quite another matter.

Wool is a sort of hair, yet hair could never be manufactured into close & soft cloth: the difference between wool & hair is, that each little fibre of wool curls up, not with a large loose curl such as we often see in hair, but with a very tiny curl or wave. Also, each curly fibre has jagged edges, being covered all over with scales, covering small that it is impossible to see them with the naked eye, or to feel them, but yet large enough to catch in one another. The natural curl of the wool fibres causes them to keep the twist they put in the spinning, & hold by their jagged edges, they hold fast to one another. Thus, in what is called the nap of broad cloth you cannot see the threads crossing each other, all that is to be seen is a soft woolly surface; the way to get that close surface is to beat & press the cloth in such a way that every little fibre becomes hooked by its jagged edges to other fibres. Thus, think how short each little wool fibre is & when an infinite number of fibres are mixed, be in a short length of yarn: how is it that this yarn is so strong & elastic & does not break at the joints? Just because the crosswise fibres that form it do not break at the joints? Look together by means of a glass little hooks so that they are quite easily pulled apart.

You think, perhaps, that the wool off the sheep is pretty much the same all the world over.

but that is not the case by any means: some are very short, fine, curly, covered with tiny scales: other sorts are long, straight & smooth because they have only a few of these little scales or hooks: And the business of the manufacturer is to find out what wools are ^{best} for the stuffs he makes.

There was a time when "all the ^{nations of the} world" were kept warm by English wools - so says an old writer; but - now a day, wools are brought from many countries to be spun & woven in our Yorkshire mills. One sort of wool does best for blankets, another for broadcloths, another for fine merinos, a fourth for alpacas &c. as to the ~~best~~ ships that sail over the world, to Australia & America & New Zealand, ^{Spain} ^{Spain} ^{Spain} some into the ports of Germany & ^{Spain} some into the docks of Hull or Liverpool with their cargoes of wool, sacks; and many a curious tale of far away lands might the wool sacks tell.

~~There would be if they could but speak!~~
The merchants, send their buyers to the sea ports, where ~~there~~ ^{in various ways} the wool, ~~is~~ ^{is} sold at a price it is fit to sell for well, they buy it to sell to the manufacturers; then it is carded off to the mills, and shall be presently that becomes fit - In the meantime when you see bags of wool as big as half a dozen beds being hoisted ^{by crane} to the top storey of a ^{high} warehouse, - you had better keep out of the way.

Now wool come from Australia than from any other part of the world excepting England itself. Beautiful wool itself is, curly, fine & silky fit to make ~~the~~ be made into the very softest & dearest stuffs. The German wool is even finer than

From that of Australia, as imported & he
made into ~~rough~~ soft-~~spun~~ ^{How the lace was built.}
Once upon a time a Yorkshire manufacturer
who had not much money to spare sent his son
to Liverpool to buy wool. Now at that time
there came in the yard of Liverpool merchant
odd little ^{many} bales of "green looking stuff" which none
would buy. People came & turned it over
& left it where it was, & the merchant did not
know what to do with the 'naughty stuff' which
had been sent to him from South America.
By a happy chance, our young Yorkshireman
turned into this merchant's yard: he pulled
out a handful from the open corner of a bale,
"felt at it, smelt at it, did everything but
taste it," & at last carried away a sample in
his pocket: very soon he came back to that lucky
Liverpool merchant, & bought up every bale of the
naughty stuff.
~~He~~ ^{He} ~~very soon~~ people heard of a new material for
dresses, called alpaca, a shiny, silky cool
stuff, most pleasant for summer wear; & this
was what Mr. Titus Salt had made of the odd looking
dirty wool he had picked up in ^{that Liverpool} ~~the~~ yard. It was the soft, fine ^{silky} ~~wool~~ ^{from the} ~~black~~ ^{black} wool of the
Alpaca, a beautiful creature whose native home is in
the lofty mountains of South America.
Mr. Salt (who afterwards became Sir Titus Salt), made
a great fortune by his discovery, & he wished his
work people to get the benefit by his wealth.
He made up his mind to move them out of the
close air of the crowded town to a lovely spot in
the Aire valley. So here he built a very fine
for

factory, a town & many streets of good houses,
his work-people, with schools, & a chapel & ~~many~~
schools public baths & wash-houses, a park
& an institute, & everything he could think
of for the comfort & pleasure of his people.

In 1855, all were ready, and, on his 50th
birthday Mr. Salt led his people out of ~~Bradford~~
Bradford to their new homes with ^{will} ~~colours~~ ^{music} ~~flourishes~~
bands playing: ~~then on~~ ~~the~~ ~~mill~~ ~~people~~ ~~took~~ ~~possession~~ ~~of~~
reposing the mill people took possession of
the bright little town of Saltaire. A bright fresh
little town it is still, even the great factory is
not yet darkened by smoke; the two monster
engines, bright & beautiful as a drawing room
clock, are kept in place for the delight of
the passers by; that is to say, the wheel of each
engine may be seen through & huge sheets of plate
glass.

Many kinds of stuff besides alpaca or made in
this fresh factory; every kind of wool used
in the woollen manufacture may be seen in
the great ^{immense} warehouses. Here are bales, old looking

bales from India, packed in J. & Co. wrapping,
neat little square ballots of alpaca from Peru,
workman-like bales from Germany; clumsy
packages of mohair, not from the mohair part of
Lybie; much ^{fine} ~~wool~~ wool from South Africa;
endless bales of Botany wool from Australia,
wools from Austria, wools from Egypt.

But we must not linger any longer over these
endless heaps of foreign wools which lie about in heaps
ready for the sorter, we have yet to tell all that is done to
the wool before it passes into the hands of the dressmaker or
tailor.

Spinning a Factory

Spinning

We get ~~some~~ ^a manufacturer who has a large mill, takes good enough to let us go over it. No sooner as we reach than a hoist lifts us up to the top story of the mill, where the wool sorting is carried on, because the sorter wants a strong light from the roof to that he may see his wools well. We enter a large, bright airy room where the sorter stands at his loft & lay room where the sorter stands at a board, placed breast high before a window upon which a fleece is spread, & with wonderful quickness they stretch, he sorts the hairs into sometimes a dozen different qualities, coarse, fine, finer, finest & so on. The wool sorter gets good wages because it is not everyone who can feel or see any difference between the fibres of one handful of wool & another. The next thing to be done is simple enough. The wool is thrown into a large trough filled with hot water, & soap, where it is worked about with iron rakes until it is quite clean. Then, a "porcupine," a roller set with hooked teeth, draws it out of the water. It is dried by being spread over a wire grating beneath which great fans move to & fro making a draught of hot air. Then, a plucker, set with crooked teeth, pulls out all the knots from the tangled apron from which it is fed; other two or three preparatory machines make the broad apron of wool into a loose roll not bigger than a child's wrist which is called a sliver. Next, the sliver goes into the combing machine, a wonderful machine that can do a dozen different things.

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with as much care as a man & fifty times as
great ~~much~~ neatness.

Consideration how difficult it is to comb a fleece
left of wool you must remember that it is
unless the combing of wool is done in this -
that the hair is fastened to the head so that
you may give a good hard tug to the comb
without bumping it out. Now, the wool is loose
at both ends; so the combing machine must
hold fast one end of the tuft & at the same
time, comb out the loose end off. Then, the combed
end must be held, & the tangled end combed off.
When the tuft is combed at both ends it
must be laid ^{as to over-cup the last tuft} ~~into the basket of combed wool~~
the comb must be cleaned with a knife & the dirt
& tangled or refuse must be emptied into a
can, & a new tuft of tangled wool must be
seized ready for combing. All this is done,
& more, as performed, by the ~~best~~ quick as thought,
by a single machine. ~~Which is worked by the turning~~
~~of a wheel,~~ & at last you see a lovely milk-white
roll of ^{combed} wool pouring out - onto the can which is
waiting to receive it.
What is the use of all this combing & brushing -
for there are little brushes as well as combs
attached to the machine - ? Just the same use
that it is to comb & brush your hair. When it goes
into the combing machine, the wool is tangled
& matted, not quite clean; when it comes out
all the little fibres of the wool lie straight & smooth
side by side, & quite free from dirt. Before this wonderful
& beautiful machine was invented all the wool-combing was
done by hand, or a very tedious & very dirty kind of work
was that of the wool-comber. Now, nothing can be cleaner, neater, &
quicker than the work of the machine.

But "combing" is not the only process by which the tiny, curling fibres of wool may be made to lie straight side by side. Carding is thought to answer better than combing for the finest kinds of wool, the fibres of which are very short & curly. We must go into the carding room to see how this is managed - a large room, with, perhaps, a hundred great carding machines in it, standing in pairs, end to end, with a passage between them.

You must, perhaps, that a card is a card upon which the wool is worked. Nothing of the kind; it is an iron roller, set all over with steel wires, shorter & closer together than the hairs of a clothes brush. There is a large card, & numbers of smaller cards in a carding machine. The wool enters into the freely moving of the machine, & is drawn through the prickles of one card after another, until, after the last carding, every fibre lies straight & even, like the hairs of your head.

The soft cloud of wool, that leaves the machine after the carding, is pressed together & rolled & drawn by one machine after another, until it becomes a sort of soft cord, about the thickness of a candle-wick. It is then wound upon ^{the machines} ~~bottoms~~ ^{spindles}. It is then ready for the spinning frame. Fully a dozen frames does the slivers of wool go through, ^{however} before it is ready for the spinning frame & as each frame ^{presses} several ~~several~~ ^{several} slivers into one, & draws out that one until it is finer than any of the slivers of which it is formed, the wool is doubled many times while passing through these frames. Indeed, it is said, that, about a quarter of a million double

(in Lancashire)
invented the multi-jenny - a wonderful machine
which will keep ^{an immense number of} ~~as many as~~ spindles at
work.

Now these machines at their work is too deep
a matter for us to explain. The great frame
standing pair all through the length of a very
large room. The machines do all the
spinning, better, perhaps, than if they had
lives. The work of the women & girls who
watch them is just to go from spindle
to spindle & to join any one of the hundred
of threads which happens to break; & this they
do with a wonderfully quick twist. Every
girl minds two frames, each frame contains
about ^{many} 120 spindles. The work is easy enough
& the spinners walk from end to end of their
frames as if they were quite at their ease, but
they must be on the watch every instant or a
wful tangle of broken thread gets made.

The noise in this, as in all the other great
rooms of the mill, is quite deafening; you
cannot hear a word that is said to you, & must
in explanation
wait till you get outside. But no doubt
the operatives get used to this; & in the best mills
the noise is the most-unpleasant thing attending
the work.

A good deal of the yarn spun in the mills
is exported, & delightful it is to an orderly
mind to watch the operation of packing. The yarn
intended for this purpose is spun upon spindle
shaped paper cores which are taken off the frames as
they stand, & packed in large crates, row upon row
end between ends, as neatly & closely as the cells
of a honeycomb; & then the whole is pressed together.